CENTERS FOR DISEASE CONTROL AND PREVENTION

FACT SHEET
CDC Autism Activities

Autism Spectrum Disorders (ASDs) are developmental disabilities that typically last throughout a person's life. They include autistic disorder, pervasive developmental disorder-not otherwise specified (PDD-NOS, including atypical autism), and Asperger syndrome. People with ASDs have significant impairments in social skills and communication. They often have repetitive behaviors and unusual interests. ASDs can often be diagnosed in children as young as 18 months. Symptoms of ASDs vary from person to person and range from mild to severe.

The Centers for Disease Control and Prevention (CDC) has been tracking the prevalence of several developmental disabilities since the 1980s and autism since 1996.

Current CDC Reports About ASD Prevalence

The following articles were published in *CDC's Morbidity and Mortality Weekly Report Surveillance Summaries* on February 9, 2007:

- **Prevalence of Autism Spectrum Disorders (ASDs)—Autism and Developmental Disabilities Monitoring (ADDM) Network, Six Sites, 2000**
  This is the first multi-site report from the ADDM Network. The project features data six states: Arizona, Georgia, Maryland, New Jersey, South Carolina, and West Virginia, representing approximately 4.5% of US 8-year-old children. Findings show that an average of 6.7 per 1,000 children who were 8 years old in 2000 had an ASD.

- **Prevalence of Autism Spectrum Disorders (ASDs)—Autism and Developmental Disabilities Monitoring (ADDM) Network, 14 Sites, 2002**
  The second report from the ADDM Network features data from 14 project sites, representing approximately 10% of US 8-year-old children. The states included Alabama, Arizona, Arkansas, Colorado, Georgia, Maryland, Missouri, New Jersey, North Carolina, Pennsylvania, South Carolina, Utah, West Virginia, and Wisconsin. Findings show that an average of 6.6 per 1,000 children who were 8 years old in 2002 had an ASD.

- **Evaluation of a Methodology to Identify Prevalence of Autism Spectrum Disorders—Autism and Developmental Disabilities Monitoring Network, 14 Sites, 2002**
  This evaluation of the ADDM Network 2002 surveillance project can be used to help interpret the ADDM Network data. It also serves as a model for other public health surveillance systems for autism or other complex disorders.

Additional CDC Reports About ASD Prevalence

- **Time Trends in Reported Diagnoses of Childhood Neuropsychiatric Disorders**
  This study was based on all Danish children born between 1990 and 1999. It found that the incidence of reported diagnoses for three childhood neuropsychiatric disorders - autism, hyperkinetic disorder and Tourette syndrome - increased among Danish children between 1990 and 2004. The incidence for a fourth condition - obsessive compulsive disorder - was also examined, but no change over time for that condition was observed. The findings suggest that recent upward trends in reported autism diagnoses may be part of a broader pattern in childhood mental illness. Published in the *Archives of Pediatrics and Adolescent Medicine,* February 2007.

- **Parental Report of Diagnosed Autism in Children Aged 4–17 Years—United States, 2003–2004**
  This article presented parent-reported data from two national surveys. Findings from the National Health Interview Survey showed that an estimated 5.7 per 1,000 school-age children had autism. Findings from the National Survey of Children's Health showed that an estimated 5.5 per 1,000 school-age children had autism. Together, these surveys suggest that at least 300,000 4- to 17-year-old children had autism in 2003–2004. Published in CDC's *Morbidity and Mortality Weekly Report*, May 5, 2006.

- **Prevalence of Autism in a United States Population: The Brick Township, New Jersey, Investigation**
  This community-based study looked at the prevalence of ASDs in Brick Township, New Jersey, in 1998. It found ASD prevalence of 6.7 per 1,000 3- to 10-year-olds. Published in *Pediatrics*, November 2001.

- **Prevalence of Autism in a U.S. Metropolitan Area**
  The Metropolitan Atlanta Developmental Disabilities Surveillance Program (MADDSP) used data from a large surveillance system in metro Atlanta, Georgia, and found that 3.4 per 1,000 3- to 10-year-olds in 1996 had an ASD. The ADDM Network methods were modeled after MADDSP. Published in *Journal of the American Medical Association*, January 1, 2003.

Upcoming Reports

CDC will soon publish the following:

- An update from MADDSP on the prevalence of ASDs over time in metropolitan Atlanta.
- Updated reports from the ADDM Network on the prevalence of ASDs in multiple areas of the United States in 2004 and 2006.

Related CDC Projects and Papers

CDC-funded Projects

- **Validation Study of the Metropolitan Atlanta Developmental Disabilities Surveillance Project** (2008)
  CDC is putting together a report to verify the data that have been collected as a part of MADDSP, which served as the basis for ADDM methodology.

- **Early Autism Spectrum Disorders Surveillance** (To be determined)
  In September 2006, CDC funded the California Department of Health, Florida State University, and the University of Utah to develop and test methods to identify the number of children under 4 years of age with an ASD.

- **Multi-state Study on Causes and Risk Factors for Autism; $5.9 Million Awarded to Five Sites** (To be determined)
  In October 2006, CDC awarded $5.9 million to five sites—the Kaiser Foundation Research Institute in California, the Colorado Department of Public Health and Environment, Johns Hopkins University in Maryland, the University of North Carolina at Chapel Hill, and the University of Pennsylvania—to help identify factors that might put children at risk for ASDs and other developmental disabilities. These sites make up the Centers for Autism and Developmental Disabilities Research and Epidemiology (CADDRE) Network. CDC will also take part in the study and will include children and their parents from the metropolitan Atlanta area. About 2,700 children ages 2–5 and their parents are likely to participate.

- **Autism and Biopsy Study** (June 2007)
  This study looks at whether the Measles Mumps Rubella (MMR) vaccine might lead to autism by causing persistent measles virus infection in the intestine. Researchers are studying the intestinal tissue of children with autism to see if the measles virus is present.

- **Immunizations and Possible Developmental Regression**
  CDC worked with the National Institutes of Health to study whether the MMR vaccine is linked with developmental regression (loss of skills), which occurs in some children with autism. The study found no evidence of a link between the two. Findings were published in the *Journal of Autism and Developmental Disorders*, April 2006.

- **Thimerosal and Autism Study** (September 2008)
  Using the Vaccine Safety Datalink, CDC is comparing thimerosal exposure in children with and without autism. Certified specialists are using the most up-to-date, standardized diagnostic tests to evaluate children with autism. Review of medical records and interviews with parents are also included.

- **Italy Thimerosal Neurological Developmental Disorders Study** (to be determined)

  CDC is working with researchers in Italy to study children who were exposed to different amounts of thimerosal during infancy as part of a clinical trial of whooping cough vaccines. Some of the vaccines contained thimerosal, and some did not. The original clinical trial did not study neurological developmental disorders (NDDs), but researchers now are comparing their occurrence among participants to see how the level of thimerosal exposure affects NDDs.

- **Thimerosal Neurological Developmental Disorders Follow-up Study** (to be determined)

  This study looks at the relationship between thimerosal and neurological developmental disorders. Researchers are giving neuropsychological tests to children 7–10 years of age whose vaccinations in the first year of life could have contained thimerosal. The study will compare test results among children exposed to different quantities of thimerosal from vaccines and other exposures.

Papers

- **The Relationship Between Autism and Parenting Stress**
  This report used the 2003 National Survey of Children's Health to look at links between parenting a child with autism and stress indicators. Parenting a child with autism with recent special service needs was linked with unique stresses greater than those linked with parenting a child with developmental disabilities in general. Published in *Pediatrics*, Special Supplement, February 2007.

- **Socio-demographic Risk Factors for Autism in a U.S. Metropolitan Area**
  This study looked at links between autism and socio-demographic factors. It found different patterns of association depending on whether or not children with autism also had mental retardation. Markers of higher social class (higher maternal education and higher median family income) were significantly associated with autism without mental retardation, but they were not associated with autism with mental retardation. These findings could be caused by differences in risk among subgroups or in how children are identified and diagnosed. These results highlight the need to further study the effects of various risk factors for autism on different subgroups of children. Published online in the *Journal of Autism Developmental Disorder,* September 2006.

- **Issues Related to the Diagnosis and Treatment of Autism Spectrum Disorders** (May 2007)
  This paper will explore how the growing number of children identified with ASDs affects diagnosis and treatment of these disorders. Issues to be studied include eligibility policies, diagnostic practices, the cost and financing of assessment, variability in diagnostic criteria, and barriers to the more widespread provision of intensive intervention for children with ASDs.

Public Awareness Campaign

- **CDC Child Development Campaign Expands to Target More Than 400,000 Child Care Facilities Nationwide**
  In November 2006, CDC expanded its "Learn the Signs. Act Early." campaign to include child care providers and preschool teachers. This phase added to efforts already in place to teach parents and health care professionals about the importance of tracking a child's social and emotional development and watching for possible early warning signs of autism and other developmental disabilities. For more information or free materials on child development, please visit www.cdc.gov/actearly.

###

DEPARTMENT OF HEALTH AND HUMAN SERVICES